

- If you have frames selected when you invoke the Insert > Frame command, Flash inserts as many new frames as you had selected (it's as if Flash copies and pastes the selected frames in a single step). When you insert frames between back-to-back keyframes, for example, if you select the frames you just inserted and press F5, you'll double the number of in-between frames with a single command. You can continue the doubling procedure until you have as many in-between frames as you need.

What Are Keyframes and In-between Frames?

In the early days of animation, it took veritable armies of artists to create the enormous number of drawings that frame-by-frame animation requires. To keep costs down, the studios broke the work into various categories based on the artistic skill required and the pay provided. The work might start with creating spec sheets for each character. Then came storyboards that outlined the action over the course of the animation. Eventually it came down to individual artists drawing and painting hundreds of cels, each slightly different from the other, to bring the animation to life.

To make the process manageable, animators broke each movement down into a series of the most crucial frames that define a movement, called keyframes, and frames that incorporate the incremental changes necessary to simulate the movement, called in-between frames. Keyframes defined a significant change to a character or object. For example, imagine a 25-frame sequence in which Bugs Bunny starts out facing the audience and then turns to his right to look at Daffy Duck. This scene requires two

keyframes—Bugs in a face-on view and Bugs in profile—and 23 in-between frames.

In the early days, some artists specialized in creating keyframes. Other artists, usually lower-paid ones, had the job of creating the frames that fell in between the keyframes. These in-betweeners (or tweeners for short) copied the drawings in the keyframes, making just the slight adjustments necessary to create the intended movement in the desired number of frames while still retaining the continuity of the character. In chapters 9 and 10, you'll learn how to turn Flash into your own personal wage slave—it will take on the drudgery of in-betweening for certain types of animation.

In Flash, you must use keyframes to define any change in the content or image, no matter how large or small the change. Flash doesn't use the term in-between frames; it simply calls any frames not defined as keyframes frames. For clarity, the exercises below use the term in-between frames to refer to any defined frames that are not keyframes.